

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

REC'D 23 MAR 2005

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PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing

(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

### FOR FURTHER ACTION

See paragraph 2 below

International application No.  
PCT/GB2005/000041

International filing date (day/month/year)  
07.01.2005

Priority date (day/month/year)  
09.01.2004

International Patent Classification (IPC) or both national classification and IPC  
B01D71/02, B01D53/22, C01B3/50

Applicant  
BP P.L.C.

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☒ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2005/000041

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2005/000041

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	4,12-14
	No: Claims	1-3,5-11,15,16
Inventive step (IS)	Yes: Claims	
	No: Claims	1-16
Industrial applicability (IA)	Yes: Claims	1-16
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

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**Box No. VIII Certain observations on the international application**

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The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

**see separate sheet**

**Re Item V:**

Reference is made to the following documents:

- D1: JP-A-4349926 (Patent Abstracts of Japan)
- D2: JP-A-10028850 (Patent Abstracts of Japan)
- D3: EP-A-1180391
- D4: EP-A-1342500
- D5: EP-A-1362630

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claims 1,2 and 15 is not new in the sense of Article 33(2) PCT.

Documents D1-D5 disclose two layer metal Pd or Pd-alloy composite membranes consisting of a porous substrate and a Pd or Pd-alloy membrane where the Pd substantially exists on the outer surface of the porous substrate support with little or no presence in the pore channels of the substrate.

D1-D5 evenly disclose processes for the preparation of the membranes comprising the essential steps of preparing the porous substrate, treating the porous substrate with a pore filler, plating the support with a Pd solution and subjecting the membrane to a post-processing (see the relevant passages as indicated in the international search report).

D1-D5 (one or more of these documents) also disclose the features as claimed in dependent claims 3,5-11 and 16. The subject-matter of claims 3 and 5-11 is not new in the sense of Article 33(2) PCT.

Dependent claims 4,12-14 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, the reasons being as follows:

No additional problem appears to have been solved by the additional technical features.

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 4,12-14 does not involve an inventive step in the sense of Article 33(3) PCT.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/GB2005/000041

**Re Item VII:**

Present claim 13 does not make sense: the subject-matter of claim 13 is in fact part of claim 12.

**Re Item VIII:**

The category of present claim 16 is not clear: it relates to a product or a process (Article 6 PCT).